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Case Report



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Infected urinoma presenting as a flank mass: A case report

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ABSTRACT

Rationale: Infected urinomas are rare complications of urinary tract obstruction and may mimic renal abscess or pyonephrosis. Presentation as a palpable flank mass is highly unusual.

Patient's concern: An 84-year-old man with fever, flank pain, and a firm right flank mass. Imaging revealed an acute multiloculated infected urinoma communicating with the proximal ureter, associated with a ureteric calculus.

Diagnosis: Infected urinoma.

Interventions: He was treated with antibiotics, percutaneous drainage, and nephrostomy.

Outcomes: Recurrence occurred three months later due to unresolved obstruction, requiring repeat drainage. Definitive surgical management was deferred due to advanced age and comorbidities, highlighting challenges in high-risk patients.

Lessons: This case highlights the importance of considering urinoma in the differential diagnosis of flank masses, the complementary roles of multimodal imaging for accurate diagnosis, and the importance of definitive management of urinary obstruction to prevent recurrence.

KEYWORDS: Urinoma; Urosepsis; Flank mass; Obstructive uropathy; Percutaneous drainage

1. Introduction

A urinoma is a urine collection extravasated into the perirenal or retroperitoneal space, most often caused by trauma, obstruction, or iatrogenic injury[1,2]. Many remain asymptomatic or present with nonspecific symptoms such as flank pain, fever, or malaise. A palpable flank mass is rare and usually indicates chronic, infected, or enlarged collections[3]. The differential diagnosis is broad and spans abscesses, pyonephrosis, hematomas, cysts, neoplasms, and numerous other retroperitoneal conditions, making timely diagnosis challenging. Imaging plays a crucial role in evaluating suspected urinomas. Untreated urinomas may cause sepsis, renal dysfunction, or electrolyte disturbances[4]. Given their clinical significance, guidance remains limited regarding long-term monitoring, recurrence prevention, and the optimal use of minimally invasive interventions, particularly in patients with chronic obstructive uropathy who are not candidates for definitive treatment. This case

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report highlights the diagnostic challenges of infected urinomas presenting as palpable flank masses and emphasizes the importance of identifying persistent urinary obstruction to prevent recurrence.

2. Case report

This report complies with local institutional ethics guidelines, which waive consent for single-patient case reports without identifiers, and was reported in accordance with the CARE guidelines[5].

An 84-year-old man presented with one week of right flank pain and swelling, generalized myalgia, and one day of fever. Past medical history included neurogenic bladder, benign prostatic hyperplasia, and conservatively managed proximal ureteric calculi with hydronephrosis. He denied dysuria, hematuria, or retention.

He was febrile (38.2 °C) with a firm, tender 8-cm right flank mass (Figure 1A). Laboratory studies showed leukocytosis (11.15×10^9 /L; reference range: $4.0\text{--}10.0 \times 10^9$ /L), elevated C-reactive protein (105 mg/L, reference range: <5 mg/L), and raised serum creatinine ($127 \mu\text{mol/L}$; reference range: $59\text{--}104 \mu\text{mol/L}$). Point-of-care ultrasound demonstrated hydronephrosis and a septated hypoechoic collection.

Given clinical and ultrasound findings, a preliminary diagnosis of pyonephrosis was made. However, contrast-enhanced computed tomography (CT) scan revealed a multiloculated, rim-enhancing retroperitoneal collection communicating with the right proximal ureter, along with an obstructing proximal ureteric calculus (Figure 1B). These findings confirmed an acute communicating

infected urinoma due to the chronic obstructive ureteric calculus.

He underwent ultrasound-guided percutaneous drainage, yielding purulent fluid. Cultures grew *Proteus mirabilis* and *Enterococcus faecalis* (both pan-sensitive). He was initially treated with intravenous ceftriaxone, later de-escalated to amoxicillin-clavulanate. His course was complicated by urosepsis requiring high-dependency support and percutaneous nephrostomy placement for urinary diversion. Serial CT imaging demonstrated interval reduction of the collection, permitting drain removal. He was discharged with outpatient follow-up in one month, and the nephrostomy was removed when drainage became minimal.

Three months later, he returned with recurrent flank pain, fever, and purulent discharge at the drainage site. CT confirmed a recurrent infected urinoma, likely due to the persistent obstruction from the ureteric calculus. Repeat ultrasound-guided drainage resulted in clinical improvement. Follow-up imaging two months after discharge showed complete resolution with no further recurrence of the urinoma. Definitive management of the ureteric calculus was not pursued in view of the patient's advanced age, frailty, and comorbidities conferring high anesthetic risk. Although the urinoma did not recur, he subsequently experienced several urinary tract infections, likely related to his underlying obstructive uropathy and neurogenic bladder.

3. Discussion

Urinomas occur when urine leaks from the collecting system due to obstruction, trauma, or rupture[1,2]. Presentation as a

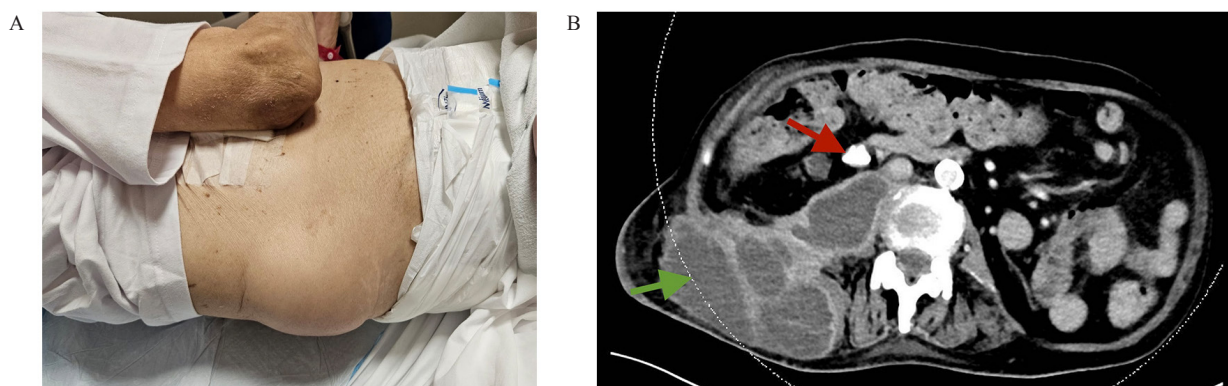


Figure 1. Examination and imaging findings in an 84-year-old male with fever, right flank pain and mass. A: Palpable right flank mass. B: CT showing multiloculated retroperitoneal urinoma (green arrow) and ureteric calculus (red arrow). CT: computed tomography.

palpable flank mass is uncommon. Case reports describe urinomas mimicking abscesses or presenting as retroperitoneal collections, underscoring their variable and sometimes misleading clinical features[3,6]. Giant pyonephrosis may present similarly, highlighting diagnostic challenges without definitive imaging[7].

Infected urinomas can resemble pyonephrosis, with overlapping features of fever, flank pain, and palpable mass. Pyonephrosis, however, is more often associated with lower urinary tract symptoms and marked systemic toxicity[8]. Early distinction is crucial, as delays in diagnosis can increase the risk of sepsis. Previous studies have highlighted ultrasound as an accessible initial imaging modality in the emergency setting, particularly for detecting hydronephrosis, perirenal fluid collections, and features suggestive of pyonephrosis[8,9]. However, its diagnostic utility is limited in evaluating complex fluid collections and extrarenal or retroperitoneal extensions. Pyonephrosis typically shows marked hydronephrosis with thickened renal pelvis wall, fat stranding, and hyperechoic debris, whereas urinomas appear as well-defined encapsulated hypoechoic extrarenal collections[8,9]. Consequently, contrast-enhanced CT with delayed imaging remains the gold standard for diagnosing urinomas, enabling assessment of active urine extravasation, delineation of the collection, and identification of the underlying cause while excluding mimics[2,8,9]. Ultrasound and CT thus play complementary roles, with ultrasound enabling early bedside assessment and CT providing definitive anatomical characterization. This underscores the importance of a multimodal imaging approach to ensure timely and accurate diagnosis.

Management depends on the size and infection status of the urinoma. Small sterile urinomas may resolve spontaneously, but large or infected collections typically require minimally invasive management such as percutaneous drainage, antibiotics, and urinary diversion via nephrostomy or ureteral stent[2,4,10]. Surgical interventions are reserved for refractory or diagnostically challenging cases[4,10]. Addressing the underlying cause is essential to prevent recurrence. In this case, recurrence occurred due to chronic unresolved obstruction, highlighting the importance of definitive management when feasible. Nonetheless, for patients who are poor surgical candidates, minimally invasive therapy remains effective. For such patients with chronic obstructive uropathy, long-term monitoring is essential, with goals centered on symptom control, preservation of renal function, and prevention of

complications. Further studies should explore long-term outcomes in elderly or high-risk patients managed conservatively, particularly regarding recurrence rates, renal function trajectories, and quality of life measures. Such insights may help refine early diagnostic pathways and guide personalized management strategies in complex or high-risk cases.

Conflict of interest statement

The authors report no conflict of interest.

Ethical approval statement

This report complies with institutional ethics guidelines (Policy and procedure number: 85040-PP-002), which waives consent for single-patient case reports without identifiers. Patient data were anonymized in the report, and consent to the use of patient photo is not required.

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Data availability statement

The data supporting the findings of this study are available from the corresponding author upon request.

Authors' contributions

All authors have made significant contributions to the manuscript. NT: literature review, drafting and editing of the manuscript. WYT: Manuscript final editing and review. EO: Conceptualization, Supervision, manuscript final editing and review. All authors read and approved the final version of the manuscript.

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References

- [1] McInerney D, Jones A, Roylance J. Urinoma. *Clin Radiol* 1977; **28**(3): 345-351.
- [2] Titton RL, Gervais DA, Hahn PF, Harisinghani MG, Arellano RS, Mueller PR. Urine leaks and urinomas: Diagnosis and imaging-guided intervention. *Radiographics* 2003; **23**(5): 1133-1147.
- [3] Vaidya R, Swetz KM. Urinoma presenting as an abscess in an immunocompromised host: A case report. *J Med Case Rep* 2013; **7**: 193.
- [4] Goldwasser J, Wahdat R, Espinosa J, Lucerna A. Urinoma: prompt diagnosis and treatment can prevent abscess formation, hydronephrosis, and a progressive loss of renal function. *Case Rep Emerg Med* 2018; **25**: 5456738.
- [5] Gagnier JJ, Kienle G, Altman DG, Moher D, Sox H, Riley D, CARE Group. The CARE guidelines: Consensus-based clinical case reporting guideline development. *J Med Case Rep* 2013; **2013**: bcr2013201554.
- [6] Artilles Medina A, Laso García I, Duque Ruiz G, Hevia Palacios M, Arias Funez F, Burgos Revilla FJ. Spontaneous urinoma debuting as retroperitoneal abscess: Report of 2 cases and literature review. *Transl Androl Urol* 2021; **10**(2): 963-968.
- [7] Selvi I, Ihsan Arik A, Basay MS. An unusual case: Adult giant pyonephrosis. *Surg Rehabil* 2018; **2**(4): 1-3.
- [8] Tamburrini S, Lugarà M, Iannuzzi M, Cesaro E, De Simone F, Del Biondo D, et al. Pyonephrosis ultrasound and computed tomography features: A pictorial review. *Diagnostics* 2021; **11**(2): 331.
- [9] Waskey A, Anderson S. Sonographic detection of a urinoma/biloma combination. *J Diagn Med Sonogr* 2019; **35**(6): 492-497.
- [10] Pandey D, Gopinath V, V S, Mounika A, Inukollu PR, Vijayaraghavan L, et al. A decade-old giant urinoma following ureteric injury. *Int Urogynecol J* 2025; **36**(8): 1707-1710.